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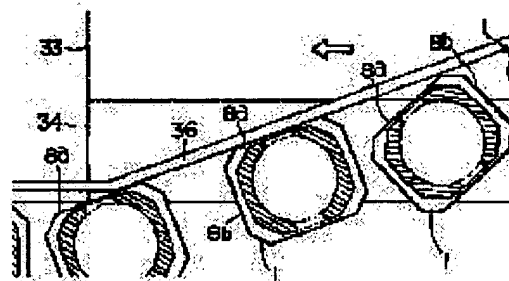
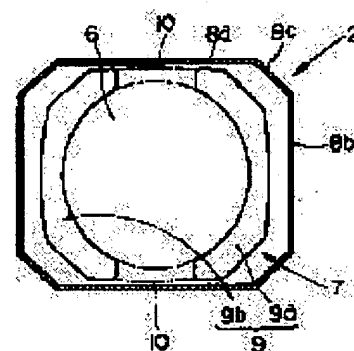
(72)Inventor : TOMIZAWA KATSUMASA
MORI SHIGEKI

(54) PRISM-SHAPED CONTAINER AND METHOD FOR ALIGNING THE SAME

(57)Abstract:

PURPOSE: To easily align prism-shaped containers on multiple-row conveyors to prevent the blockage of the conveyors by the containers and to avoid falling down of the containers by a method wherein a ground contact area of approximately rectangular shape is provided on the outer periphery of a recess bulging into the body of the container from the bottom thereof and a non-contact area is formed near the center of a longer side of the ground contact area so as to bisect the ground contact area.

CONSTITUTION: In a bottom portion 7 of a PET bottle, the outer periphery of a recess 6 is formed into an approximately rectangular ground contact area 9 corresponding to the cross section of a body portion 2, and the area 9 is divided into ground contact areas 9a, 9b by non-contact areas 10, each of which is formed near the center of a longer side of the area 9 so as to communicate with the recess 6 and bulge into a body portion 2 of the container. And the PET bottle stands on the areas 9a, 9b. As a result, when a shorter side 8b of the bottle makes contact with an oblique guide 36, the area 9b located on a conveyor on a higher speed side is turned, due to speed differences between the conveyor 33, 34, to the advancing direction of the conveyor 34 so that the container is transported, while a longer side 8a is in contact with the guide 36.



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(71) 出願人 000241865

北海製罐株式会社

東京都千代田区丸の内2丁目2番2号

(72) 発明者 富澤 克正

埼玉県岩槻市鹿室839-1 北海製罐株式

会化成品技術部内

(72) 発明者 森 茂樹

埼玉県岩槻市鹿室839-1 北海製罐株式

会化成品技術部内

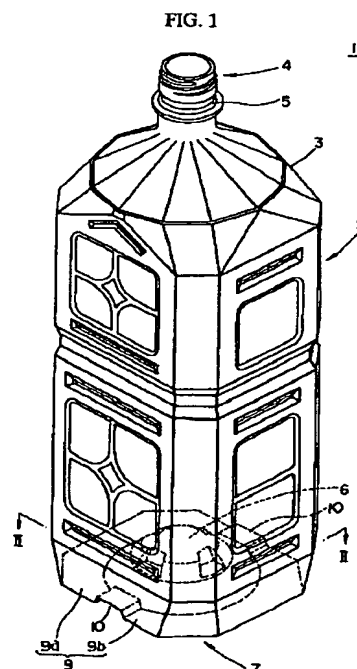
(74) 代理人 弁理士 佐藤 辰彦 (外1名)

(54) 【発明の名称】 角型容器及びその整列方法

(57) 【要約】

【目的】 多列コンベヤにより容易に整列できる角型容器及びその整列方法を提供する。

【構成】 角型容器1は、横断面が略長方形形状の胴部2と、胴部2の下部を形成する底部7とからなり、底部7から胴部2内に半球状に膨出する凹部6の外周側に略長方形形状の接地面9が設けられている。接地面9の長辺に、接地面9を二分する非接地領域10を備える。非接地領域10は、長辺の中央付近に設けられている。複数のベルトコンベヤ32、33、34、35を低速のものから順に配列した多列コンベヤ31に、低速のコンベヤ32から複数のコンベヤ33、34を斜めに横断する斜めガイド36を設け、角型容器1を、最も低速のコンベヤ32に供給し、胴部2の一边を斜めガイド36に当接させて搬送して長辺8aで斜めガイド36に当接するように整列する。



【特許請求の範囲】

【請求項1】横断面が略長形状の胴部と、該胴部の下部を形成する底部とからなり、該底部から該胴部内に膨出する凹部の外周側に略長形状の接地面を設けた角型容器において、前記接地面の長辺に該接地面を二分する非接地領域を形成してなることを特徴とする角型容器。

【請求項2】前記非接地領域は、前記接地面の前記長辺の中央付近に設けられていることを特徴とする請求項1記載の角型容器。

【請求項3】同一搬送方向に互いに異なる速度で移動する複数のベルトコンベヤを低速のものから順に平行に配列してなる多列コンベヤに、最も低速のコンベヤから高速側のコンベヤの搬送方向に向けて該複数のコンベヤを斜めに横断する斜めガイドを設け、横断面が略長形状の胴部と、該胴部の下部を形成する底部とからなり該底部から該胴部内に膨出する凹部の外周側に略長形状の接地面を設け、前記接地面の長辺に該接地面を二分する非接地領域を形成してなる角型容器を、前記最も低速のコンベヤに供給し、前記胴部の一辺を斜めガイドに当接させて搬送して前記胴部の長辺で前記斜めガイドに当接するように整列させることを特徴とする角型容器の整列方法。

【請求項4】前記角型容器は、前記接地面の前記長辺の中央付近に前記非接地領域が設けられていることを特徴とする請求項3記載の角型容器の整列方法。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、例えばポリエチレンテレフタレート樹脂等のプラスチックをブロー成形により二軸延伸してなり、胴部の横断面が略長形状を備える飲料容器等の角型容器及びその整列方法に関するものである。

【0002】

【従来の技術】従来、ウーロン茶、ミネラルウォーター等の容器として、ポリエチレンテレフタレート樹脂等のプラスチックをブロー成形により二軸延伸してなる飲料容器が用いられている。前記飲料容器として、胴部の横断面が略長形状を備え、該胴部の下部を形成する底部から該胴部内に半球状に膨出する凹部の外周側に接地面を設け、該接地面により直立する容器があり、このような飲料容器は一般に角型飲料容器と呼ばれている。前記形状の角型飲料容器は、その胴部の横断面において隣り合う二辺の長さが異なるので、内容物の充填工程、容器の梱包工程等の搬送ラインでは、同一方向に整列していることが望ましい。

【0003】前記形状の角型飲料容器を同一方向に整列させるために、従来、図4示のような多列コンベヤ41が使用されている。多列コンベヤ41は、同一搬送方向に互いに異なる速度で移動する複数のベルトコンベヤ4

2、43、44、45を低速のものから順に平行に配列し、最も低速のコンベヤ42から高速側のコンベヤ45に向けてコンベヤ43、44を斜めに横断し、下流側では最も高速のコンベヤ45に平行になっている斜めガイド46及び斜めガイド46と反対の側にコンベヤ45と平行になるように設けられたガイド47を備えている。

【0004】このような装置によれば、前記角型飲料容器48を図4に斜線部として示す接地面49で直立させ、略長形状の胴部横断面の長辺50aまたは短辺50bを斜めガイド46に当接させて、前記複数のベルトコンベヤ42、43、44、45の低速側から高速側に向けて搬送すると、該角型飲料容器48は斜めガイド46に沿って移動する。そして、低速のコンベヤ43と、より高速のコンベヤ44との境界では、前記接地面49のコンベヤ43に載置されている部分と、コンベヤ44に載置されている部分とでは搬送される速度が異なるため、前記接地面49の半分近くが高速側のコンベヤ44に移載されたときに、この移載された部分が該コンベヤ44に引き擦られ、該部分を斜めガイド46の側に回動させようとするモーメントが働く。

【0005】従って、前記角型飲料容器48が図4示のようにその略長形状の胴部横断面の短辺50bで斜めガイド46に当接し、長辺50aが斜めガイド46と直角になって搬送されているときには、前記接地面49のコンベヤ43に載置されている部分49aと、コンベヤ44に載置されている部分49bとのうち、高速側のコンベヤ44に載置されている部分49bが該コンベヤ44に引き擦られ、角型飲料容器48が前記モーメントにより図4に矢示するように回動し、該角型飲料容器48が長辺50aで斜めガイド46に接するようになって、最も高速のコンベヤ45に移載される。

【0006】一方、前記角型飲料容器48がその略長形状の胴部横断面の長辺50aで斜めガイド46に当接して搬送されているときには、前記モーメントが働いても角型飲料容器48は回動せず、長辺50aで斜めガイド46に当接する状態のまま最も高速のコンベヤ45に移載される。

【0007】この結果、前記角型飲料容器48は最も高速のコンベヤ45により搬送されるときには、その長辺50aがガイド46、47に平行になるように整列される。

【0008】しかしながら、従来の角型飲料容器48ではその略長形状の胴部横断面の短辺50bで斜めガイド46に当接し、長辺50aが斜めガイド46と直角になっていても前記モーメントが働き難いことがあり、この場合には、前記角型飲料容器48が整列されないために、搬送ラインで詰まったり、転倒するという不都合がある。

【0009】

【発明が解決しようとする課題】本発明は、かかる不都合

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合を解消して、多列コンベヤにより容易に整列することができる角型容器及び該容器を容易に整列することができる整列方法を提供することを目的とする。

【0010】

【課題を解決するための手段】かかる目的を達成するために、本発明の角型容器は、横断面が略長方形の胴部と、該胴部の下部を形成する底部とからなり、該底部から該胴部内に膨出する凹部の外周側に略長方形の接地面を設けた角型容器において、前記接地面の長辺に該接地面を二分する非接地領域を形成してなることを特徴とする。

【0011】前記非接地領域は、前記接地面の前記長辺に設けられていればよく、その大きさ、形状に特に限定はないが、該非接地領域により区分される接地面が対等の関係になるように前記長辺の中央付近に設けられていることが好ましい。

【0012】また、本発明の角型容器の整列方法は、同一搬送方向に互いに異なる速度で移動する複数のベルトコンベヤを低速のものから順に平行に配列してなる多列コンベヤに、最も低速のコンベヤから高速側のコンベヤの搬送方向に向けて該複数のコンベヤを斜めに横断する斜めガイドを設け、横断面が略長方形の胴部と、該胴部の下部を形成する底部とからなり該底部から該胴部内に膨出する凹部の外周側に略長方形の接地面を設け、前記接地面の長辺に該接地面を二分する非接地領域を形成してなる角型容器を、前記最も低速のコンベヤに供給し、前記胴部の一辺を斜めガイドに当接させて搬送して前記胴部の長辺で前記斜めガイドに当接するように整列させることを特徴とする。

【0013】前記整列方法に用いられる前記角型容器は、前記接地面の前記長辺の中央付近に前記非接地領域が設けられていることを特徴とする。

【0014】

【作用】本発明によれば、同一搬送方向に互いに異なる速度で移動する複数のベルトコンベヤを低速のものから順に平行に配列し、最も低速のコンベヤから高速側のコンベヤの搬送方向に向けて該複数のコンベヤを斜めに横断する斜めガイドを設けた多列コンベヤにより、前記角型容器を前記接地面で直立させて前記ガイドに沿って搬送すると、該角型容器が略長方形の胴部横断面の短辺で斜めガイドに当接し、長辺が該斜めガイドと直角になって搬送されているときには、前記複数のコンベヤの低速のものと高速のものと境界で、前記接地面に設けられた非接地領域が形成された部分が該境界を跨ぐ状態になる。

【0015】すると、本発明の角型容器では、前記非接地領域が形成された部分は、接地面が全く無くこの部分で接地面が二分されているので、該非接地領域が形成された部分を境にして、前記接地面の低速のコンベヤに載置されている部分と高速のコンベヤに移載されつつある

部分とが明確に区分される。この結果、前記コンベヤ間の速度差により前記角型容器を該高速のコンベヤの進行方向に回動させようとするモーメントの働きが強化され、前記角型容器の接地面の高速側のコンベヤに移載されている部分が確実に前記ガイドの方向に回動される。

【0016】このとき、前記非接地領域が前記接地面の前記長辺の中央付近に設けられていることにより、前記複数のコンベヤの低速のものと高速のものと境界で、前記接地面の半分近くが高速側のコンベヤに移載されたときに、該非接地領域が形成された部分が該境界を跨ぐ状態になる。従って、該非接地領域により区分される部分が対等になり、どちらの区分が高速のコンベヤに移載された場合にも同様に前記ガイドの方向に回動される。

【0017】

【実施例】次に、添付の図面を参照しながら本発明の角型容器及びその整列方法についてさらに詳しく説明する。図1は本実施例の角型容器の斜視図、図2は図1の11-11線断面図、図3は本実施例の角型容器の整列方法を示す平面図である。

【0018】本実施例の角型容器は、ウーロン茶、ミネラルウォーター等の容器として用いられる飲料容器であり、ポリエチレンテレフタレート樹脂をブロー成形により二軸延伸してなるペットボトルである。図1及び図2に示すように、本実施例のペットボトル1は、横断面が略長方形の胴部2と、胴部2の上方に肩部3を介して設けられ外周面に螺条4を備える円筒形状の口部5と、胴部2の下部を形成し、中央部に胴部2内に膨出する半球状の凹部6を備える底部7とからなっている。

【0019】胴部2の横断面は、長辺8aと短辺8bとからなる長方形の頂角が斜辺8cにより面取りされた略長方形状となっている。胴部2の側壁は、略平面状であればよく、図1示のように多少の凹凸からなる図案が形成されていてもよい。

【0020】底部7は、前記凹部6の外周側が前記胴部2の横断面に対応する略長方形の接地面9となっており、接地面9はその長辺側の中央付近に、外方から凹部6に連通すると共に胴部2内に膨出するように形成された非接地領域10により、接地面9a、9bに二分されている。そして、ペットボトル1は、接地面9a、9bで直立するようになっている。

【0021】次に、本発明の整列方法について説明する。

【0022】本発明の整列方法は、図3示のような多列コンベヤ31を用いて、ペットボトル1を整列させるものである。多列コンベヤ31は、同一搬送方向に互いに異なる速度で移動する複数のベルトコンベヤ32、33、34、35を低速のものから順に平行に配列し、最も低速のコンベヤ32から高速側のコンベヤ35に向けてコンベヤ33、34を斜めに横断し、下流側では最も高速のコンベヤ35に平行になっている斜めガイド36

及び斜めガイド36と反対の側にコンベヤ35と平行になるように設けられたガイド37を備えている。

【0023】図3示の多列コンベヤ31により前記ペットボトル1を整列させるときには、まず、該ペットボトル1が前工程から最も低速のコンベヤ32に供給される。このとき、ペットボトル1は、無秩序な方向で斜めガイド36に当接するが、斜辺8cは極く短く、斜辺8cで斜めガイド36に当接して搬送されることは著しく不安定であるので、長辺8aまたは短辺8bで斜めガイド36に当接して搬送される。

【0024】次に、前記のように搬送されるペットボトル1が、低速のコンベヤ33と、より高速のコンベヤ34との境界に差しかけると、前記接地面9の低速側のコンベヤ32に載置されている部分と、高速側のコンベヤ34に移載されつつある部分とでは搬送される速度が異なるため、前記接地面9の半分近くが高速側のコンベヤ34に移載されたときに、高速側のコンベヤ34に移載されつつある部分が該コンベヤ34に引き擦られ、この部分を斜めガイド36の側に回動させようとするモーメントが働く。

【0025】このとき、図3示のようにペットボトル1がその短辺8bで斜めガイド36に当接し、長辺8aが斜めガイド36と直角になっていると、低速側のコンベヤ33と高速側のコンベヤ34との境界で前記接地面9に設けられた非接地領域10が長辺8aの略中央部付近で該境界を跨ぐ状態になり、該非接地領域10を境に一方の接地面9aは低速側のコンベヤ33に載置され、他方の接地面9bは高速側のコンベヤ34に載置されているので、コンベヤ33に載置されている部分9aとコンベヤ34に載置されている部分9bとが明確に区分される。

【0026】この結果、コンベヤ33、34間の速度差により高速側のコンベヤ34に載置されている接地面9bを該コンベヤ34の進行方向に回動させようとするモーメントが強く働き、接地面9bが確実に斜めガイド36の方向に回動され、ペットボトル1は長辺8aで斜めガイド36に当接して搬送されるようになる。

【0027】尚、前記ペットボトル1が初めからその長

辺8aで斜めガイド36に当接しているときには、該ペットボトル1は安定して接地面9は回動せず、長辺8aで斜めガイド36に当接したままの状態に該接地面9の過半が高速側のコンベヤ34に移載され、そのまま最も高速のコンベヤ35に移載される。

【0028】そして、ペットボトル1は、前記のようにして長辺8aで斜めガイド36に当接するように整列され、ガイド36、37に案内されてコンベヤ35により次工程に搬送される。

- 10 【0029】尚、前記各実施例では、前記非接地領域10は接地面9の長辺8aの中央付近に設けられているが、非接地領域10は接地面9を前記のように区分できればよく、中央付近以外の位置、例えば、長辺8aの短辺8b寄りの部分に設けられていてもよく、コーナー部を除き長辺8a全体に亘って設けられていてもよい。

- 【0030】また、前記各実施例では、飲料用の角型ペットボトルについて説明しているが、本発明の角型容器は胴部の横断面が略長方形状であれば、前記飲料用の角型ペットボトルに限定されるものではなく、ポリエチレンテレフタレート以外のプラスチックからなる飲料用角型ボトルでもよく、飲料用以外の角型容器でもよい。さらに、飲料用以外の角型容器であるときには、プラスチック以外の材料からなる容器であってもよい。

【0031】

【発明の効果】以上のことから明らかなように、本発明によれば、多列コンベヤにより角型容器を容易に整列することができ、搬送ラインでの容器の詰まりや転倒を防止することができる。

【図面の簡単な説明】

- 30 【図1】本発明に係わる角型容器の斜視図。

【図2】図1のII-II線断面図。

【図3】本発明に係わる角型容器の整列方法を示す平面図。

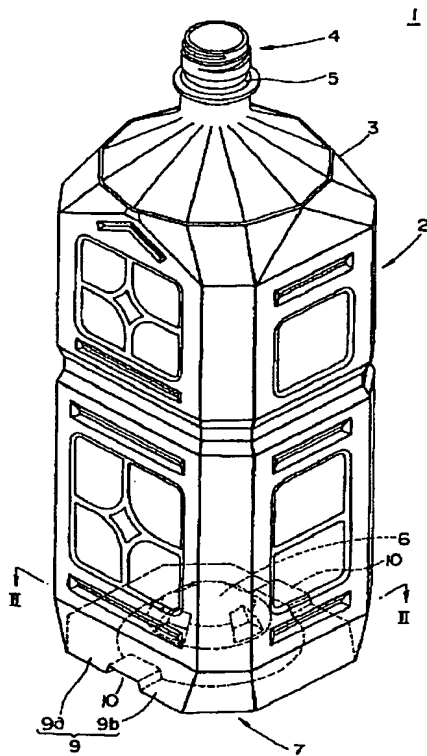
【図4】従来の角型容器の整列方法を示す平面図。

【符号の説明】

1…角型容器、 2…胴部、 7…底面、 8a…長辺、 9…接地面、 10…非接地領域。

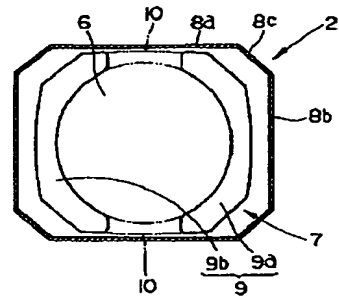
【図1】

FIG. 1



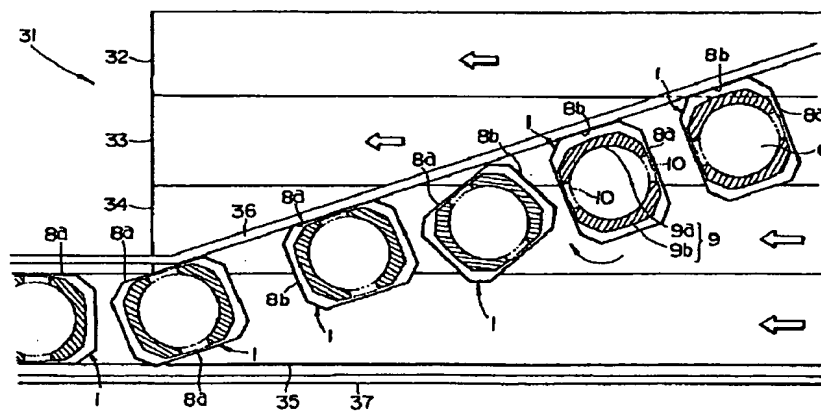
【図2】

FIG. 2



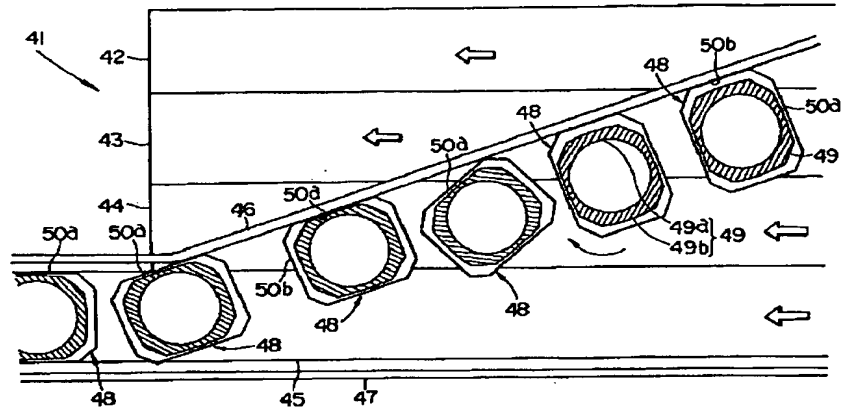
【図3】

FIG. 3



【図4】

FIG. 4



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CLAIMS

[Claim(s)]

[Claim 1] The square shape container characterized by coming to form in the long side of said ground plane the non-grounding field which bisects this ground plane in the square shape container which established the abbreviation rectangle-like ground plane in the periphery side of the crevice which the cross section consists of an abbreviation rectangle-like drum section and a pars basilaris ossis occipitalis which forms the lower part of this drum section, and bulges in this drum section from this pars basilaris ossis occipitalis.

[Claim 2] Said non-grounding field is a square shape container according to claim 1 characterized by being prepared near the center of said long side of said ground plane.

[Claim 3] On the multi-train conveyor which it comes to arrange in parallel sequentially from a low-speed thing, two or more band conveyors which move in the same conveyance direction at a mutually different rate The slanting guide which crosses these two or more conveyors aslant towards the conveyance direction of the conveyor by the side of a high speed from a low-speed conveyor most is prepared. The cross section An abbreviation rectangle-like drum section, An abbreviation rectangle-like ground plane is established in the periphery side of the crevice which consists of a pars basilaris ossis occipitalis which forms the lower part of this drum section, and bulges in this drum section from this pars basilaris ossis occipitalis. The square shape container which comes to form in the long side of said ground plane the non-grounding field which bisects this ground plane The alignment approach of the square shape container characterized by said thing [making it align so that a low-speed conveyor may be supplied most, one side of said drum section may be made to contact a slanting guide, it may convey and said slanting guide may be contacted in the long side of said drum section].

[Claim 4] Said square shape container is the alignment approach of the square shape container according to claim 3 characterized by preparing said non-grounding field near the center of said long side of said ground plane.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to a square shape container and its alignment approaches, such as a drink container with which it comes to carry out biaxial stretching of the plastics, such as polyethylene terephthalate resin, by blow molding, and the cross section of a drum section is equipped with the shape of an abbreviation rectangle.

[0002]

[Description of the Prior Art] Conventionally, the drink container which comes to carry out biaxial stretching of the plastics, such as polyethylene terephthalate resin, by blow molding is used as containers, such as oolong tea and mineral water. As said drink container, the cross section of a drum section is equipped with the shape of an abbreviation rectangle, a ground plane is prepared in this drum section at the periphery side of the crevice which bulges in the shape of a semi-sphere from the pars basilaris ossis occipitalis which forms the lower part of this drum section, there is a container which stands straight by this ground plane, and, generally such a drink container is called the square shape drink container. Since the length of two sides which adjoins each other on the cross section of the drum section differs, as for the square shape drink container of said configuration, having aligned in the same direction is as desirable as the packer of contents in conveyance Rhine, such as a packing process of a container.

[0003] In order to align the square shape drink container of said configuration in the same direction, a multi-train conveyor 41 like **4** is used conventionally. The multi-train conveyor 41 arranges in parallel two or more band conveyors 42, 43, 44, and 45 which move in the same conveyance direction at a mutually different rate sequentially from a low-speed thing. Conveyors 43 and 44 are most crossed aslant towards the conveyor 45 by the side of a high speed from the low-speed conveyor 42. In the downstream, it has the guide 47 prepared so that it might become parallel to a conveyor 45 at a slanting guide 46 and slanting guide 46, and opposite side. [which are parallel to the high-speed conveyor 45]

[0004] If according to such equipment upright said square shape drink container 48 in the ground plane 49 shown in drawing 4 as the slash section, abbreviation rectangle-like long side 50a or shorter side 50b of the drum section cross section is made to contact the slanting guide 46 and it conveys towards a high-speed side from the low-speed side of two or more of said band conveyors 42, 43, 44, and 45, this square shape drink container 48 will move along with the slanting guide 46. With the low-speed conveyor 43, more and on a boundary with the high-speed conveyor 44 Since the rates conveyed in the part currently laid in the conveyor 43 of said ground plane 49 and the part currently laid in the conveyor 44 differ, When about the one half of said ground plane 49 is transferred to the conveyor 44 by the side of a high speed, this transferred part is lengthened and ground against this conveyor 44, and the moment which is going to rotate this part to the slanting guide 46 side works.

[0005] Therefore, said square shape drink container 48 contacts the slanting guide 46 like **4** by shorter side 50b of the drum section cross section of the shape of the abbreviation rectangle. When long side 50a becomes the slanting guide 46 and a right angle and is conveyed The inside of partial 49a currently laid in the conveyor 43 of said ground plane 49, and partial 49b currently laid in the conveyor 44, Partial 49b currently laid in the conveyor 44 by the side of a high speed is lengthened and ground against this conveyor 44. It rotates so that the square shape drink container 48 may **** to drawing 4 with said moment, and this square shape drink container 48 comes to touch the slanting guide 46 by long side 50a, and is most transferred to the high-speed conveyor 45.

[0006] On the other hand, when said square shape drink container 48 is conveyed in contact with the slanting guide 46 by long side 50a of the drum section cross section of the shape of the abbreviation rectangle, even if said moment works, the square shape drink container 48 does not rotate, but is most transferred to the high-speed conveyor 45 with the condition of contacting the slanting guide 46 by long side 50a.

[0007] Consequently, when most conveyed by high-speed conveyor 45, said square shape drink container 48 aligns so that that long side 50a may become parallel to guides 46 and 47.

[0008] However, with the conventional square shape drink container 48, even if it contacts the slanting guide 46 by shorter side 50b of the drum section cross section of the shape of that abbreviation rectangle and long side 50a has become the slanting guide 46 and a right angle, in order that it may be hard to commit said moment and said square shape drink container 48 may not align in this case, there is un-arranging [of getting it blocked in conveyance Rhine, or falling].

[0009]

[Problem(s) to be Solved by the Invention] This invention cancels this un-arranging and aims at offering the alignment approach which can align easily the square shape container and this container which can align easily by multi-train conveyor.

[0010]

[Means for Solving the Problem] In order to attain this purpose, the cross section consists of an abbreviation rectangle-like drum section and a pars basilaris ossis occipitalis which forms the lower part of this drum section, and the square shape container of this invention is characterized by coming to form in the long side of said ground plane the non-grounding field which bisects this ground plane in the square shape container which established the abbreviation rectangle-like ground plane in the periphery side of the crevice which bulges in this drum section from this pars basilaris ossis occipitalis.

[0011] Although there is especially no limitation in the magnitude and a configuration, it is [that said non-grounding field should just be established in said long side of said ground plane] desirable to be prepared near the center of said long side so that the ground plane classified by this non-grounding field may become equal relation.

[0012] The alignment approach of the square shape container of this invention two or more band conveyors which move in the same conveyance direction at a mutually different rate on moreover, the multi-train conveyor which it comes to arrange in parallel sequentially from a low-speed thing The slanting guide which crosses these two or more conveyors aslant towards the conveyance direction of the conveyor by the side of a high speed from a low-speed conveyor most is prepared. The cross section An abbreviation rectangle-like drum section, An abbreviation rectangle-like ground plane is established in the periphery side of the crevice which consists of a pars basilaris ossis occipitalis which forms the lower part of this drum section, and bulges in this drum section from this pars basilaris ossis occipitalis. The square shape container which comes to form in the long side of said ground plane the non-grounding field which bisects this ground plane is characterized by said thing [making it align so that a low-speed conveyor may be supplied most, one side of said drum section may be made to contact a slanting guide, it may convey and said slanting guide may be contacted in the long side of said drum section].

[0013] Said square shape container used for said alignment approach is characterized by preparing said non-grounding field near the center of said long side of said ground plane.

[0014]

[Function] According to this invention, two or more band conveyors which move in the same conveyance direction at a mutually different rate are arranged in parallel sequentially from a low-speed thing. By multi-train conveyor which prepared the slanting guide which crosses these two or more conveyors aslant towards the conveyance direction of the conveyor by the side of a high speed from a low-speed conveyor most If said square shape container is uprighted in said ground plane and conveyed along with said guide When this square shape container contacts a slanting guide by the shorter side of the abbreviation rectangle-like drum section cross section, a long side becomes this slanting guide and a right angle and it is conveyed The part in which the non-grounding field established in said ground plane was formed on the boundary of the thing of the low speed of two or more of said conveyors and a high-speed thing will be in the condition over this boundary.

[0015] Then, with the square shape container of this invention, as for the part in which said non-grounding field was formed, the part by which a ground plane is being transferred to the conveyor of a part and a high speed currently laid in the conveyor of the low speed of said ground plane bordering on the part in which this non-grounding field was formed since the ground plane is completely bisected in the part of non-Lycium chinense is classified clearly. Consequently, the work of the moment which is going to make the travelling direction of the conveyor of this high speed rotate said square shape container by the speed difference between said conveyors is strengthened, and the part transferred to the conveyor by the side of the high speed of the ground plane of said square shape container rotates towards said guide certainly.

[0016] When about the one half of said ground plane is transferred to the conveyor by the side of a high speed on the boundary of the thing of the low speed of two or more of said conveyors, and a high-speed thing by preparing said non-grounding field near the center of said long side of said ground plane at this time, the part in which this non-grounding

field was formed will be in the condition over this boundary. Therefore, the part classified by this non-grounding field becomes equal, and when which partition is transferred to a high-speed conveyor, it moves towards said guide similarly.

[0017]

[Example] Next, it explains in more detail about the square shape container and its alignment approach of this invention, referring to an attached drawing. Drawing 1 is a top view in which the perspective view of the square shape container of this example and drawing 2 show the II-II line sectional view of drawing 1, and drawing 3 shows the alignment approach of the square shape container of this example.

[0018] The square shape container of this example is a drink container used as containers, such as oolong tea and mineral water, and is a PET bottle which comes to carry out biaxial stretching of the polyethylene terephthalate resin by blow molding. As shown in drawing 1 and drawing 2, the cross section forms the abbreviation rectangle-like drum section 2, the regio oralis 5 of the shape of a cylindrical shape which is established above a drum section 2 through a shoulder 3, and equips a peripheral face with a spiral rib 4, and the lower part of a drum section 2, and PET bottle 1 of this example consists of a pars basilaris ossis occipitalis 7 equipped with the crevice 6 of the shape of a semi-sphere which bulges in a drum section 2 in the center section.

[0019] The cross section of a drum section 2 serves as the shape of an abbreviation rectangle by which the vertical angle of the rectangle which consists of long side 8a and shorter side 8b was beveled by oblique side 8c. The design which consists of some irregularity like ****1**** may be formed that the side attachment wall of a drum section 2 should just be an abbreviation plane.

[0020] It is divided into two by the non-grounding field 10 formed so that a pars basilaris ossis occipitalis 7 might bulge in a drum section 2 while the periphery side of said crevice 6 serves as the ground plane 9 of the shape of an abbreviation rectangle corresponding to the cross section of said drum section 2 and a ground plane 9 is open for free passage from the method of outside near the center by the side of the long side in a crevice 6 in ground planes 9a and 9b. And PET bottle 1 stands straight in ground planes 9a and 9b.

[0021] Next, the alignment approach of this invention is explained.

[0022] The alignment approach of this invention aligns PET bottle 1 using a multi-train conveyor 31 like ****3****. The multi-train conveyor 31 arranges in parallel two or more band conveyors 32, 33, 34, and 35 which move in the same conveyance direction at a mutually different rate sequentially from a low-speed thing. Conveyors 33 and 34 are most crossed aslant towards the conveyor 35 by the side of a high speed from the low-speed conveyor 32. In the downstream, it has the guide 37 prepared so that it might become parallel to a conveyor 35 at a slanting guide 36 and slanting guide 36, and opposite side. [which are parallel to the high-speed conveyor 35]

[0023] When aligning said PET bottle 1 by multi-train conveyor 31 of ****3****, this PET bottle 1 is first supplied most to the low-speed conveyor 32 from a last process. although PET bottle 1 contacts the slanting guide 36 in a disorderly direction at this time -- oblique side 8c -- ******** -- since it is short and it is remarkably unstable to be conveyed in contact with the slanting guide 36 by oblique side 8c, in contact with the slanting guide 36, it is conveyed by long side 8a or shorter side 8b.

[0024] PET bottle 1 conveyed as mentioned above Next, the low-speed conveyor 33, Since the rates conveyed in the part currently laid in the conveyor 32 by the side of the low speed of said ground plane 9 and the part currently transferred to the conveyor 34 by the side of a high speed differ when it comes to a boundary with the high-speed conveyor 34 more, When about the one half of said ground plane 9 is transferred to the conveyor 34 by the side of a high speed, the part currently transferred to the conveyor 34 by the side of a high speed is lengthened and ground against this conveyor 34, and the moment which is going to rotate this part to the slanting guide 36 side works.

[0025] If PET bottle 1 contacts the slanting guide 36 by that shorter side 8b like ****3**** and long side 8a has become the slanting guide 36 and a right angle at this time The non-grounding field 10 established in said ground plane 9 on the boundary of the conveyor 33 by the side of a low speed and the conveyor 34 by the side of a high speed will be in the condition over this boundary near the abbreviation center section of long side 8a. Since one ground-plane 9a is laid in the conveyor 33 by the side of a low speed bordering on this non-grounding field 10 and ground-plane 9b of another side is laid in the conveyor 34 by the side of a high speed, partial 9a currently laid in the conveyor 33 and partial 9b currently laid in the conveyor 34 are classified clearly.

[0026] Consequently, a conveyor 33 and the moment which is going to make the travelling direction of this conveyor 34 rotate ground-plane 9b currently laid in the conveyor 34 by the side of a high speed by the speed difference between 34 work strongly, ground-plane 9b rotates towards the slanting guide 36 certainly, and PET bottle 1 comes to be conveyed in contact with the slanting guide 36 by long side 8a.

[0027] In addition, when said PET bottle 1 is in contact with the slanting guide 36 by the long side 8a from the start, it is

stable, and this PET bottle 1 does not rest on a ground plane 9, but half a fault of this ground plane 9 is transferred to the conveyor 34 by the side of a high speed conveyor. The condition [that it is in contact with the slanting guide 36 by long side 8a], and it is most transferred to the high-speed conveyor 35 as it is.

[0028] And as PET bottle 1 is the above, it aligns so that the slanting guide 36 may be contacted by long side 8a, it is guided at guides 36 and 37, and is conveyed by degree process by conveyor 35.

[0029] In addition, in said each example, although said non-grounding field 10 is formed near the center of long side 8a of a ground plane 9, that what is necessary is just to be able to classify a ground plane 9 as mentioned above, the non-grounding field 10 may be established in locations other than near a center, for example, the part of the shorter side 8b approach of long side 8a, and may be continued and established in the whole long side 8a except for the corner section.

[0030] Moreover, although said each example explains the square shape PET bottle of a bevel use, as long as the cross section of a drum section is an abbreviation rectangle-like, the bevel-use square shape bottle which is not limited to the square shape PET bottle of said bevel use, and consists of plastics other than polyethylene terephthalate is sufficient as the square shape container of this invention, and square shape containers other than a bevel use are sufficient as it. Furthermore, when it is square shape containers other than a bevel use, you may be the container which consists of ingredients other than plastics.

[0031]

[Effect of the Invention] According to this invention, a square shape container can be easily aligned by multi-train conveyor, and plugging of the container in conveyance Rhine and a fall can be prevented so that clearly from the above thing.

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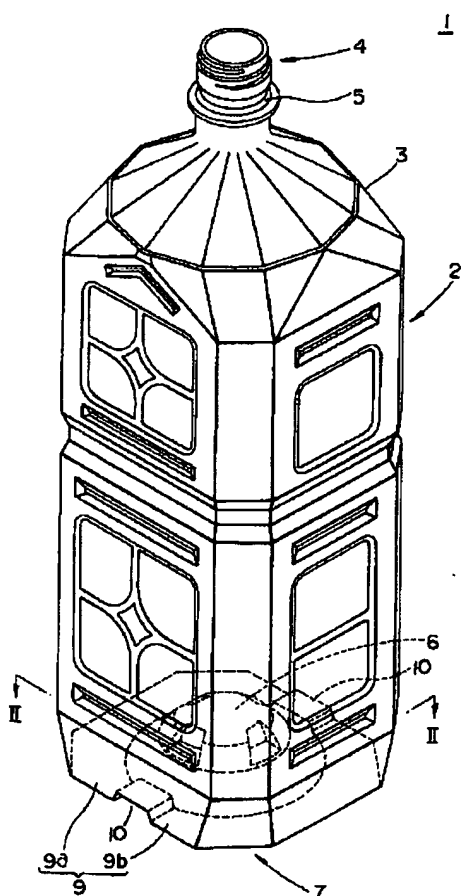
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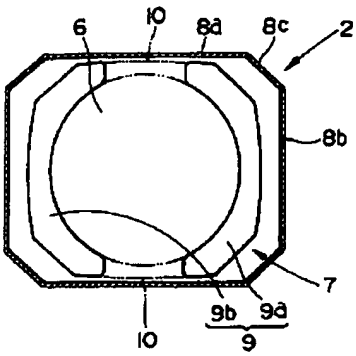
[Drawing 1]

FIG. 1



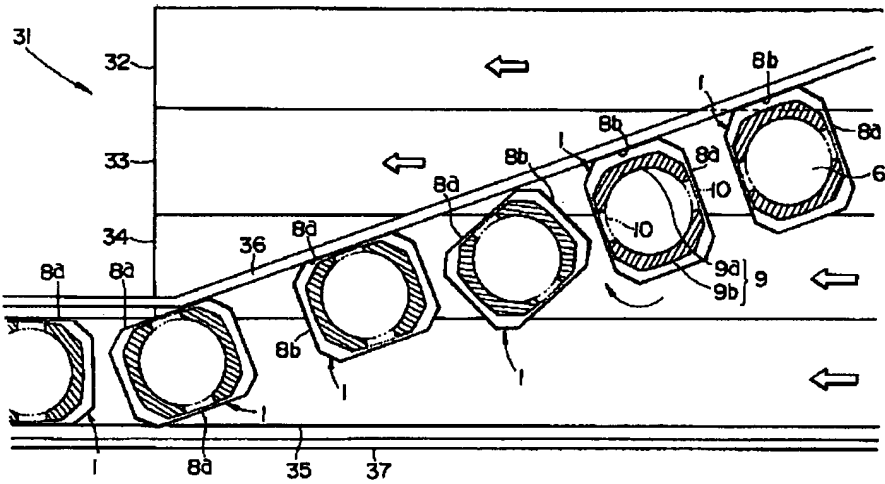
[Drawing 2]

FIG. 2



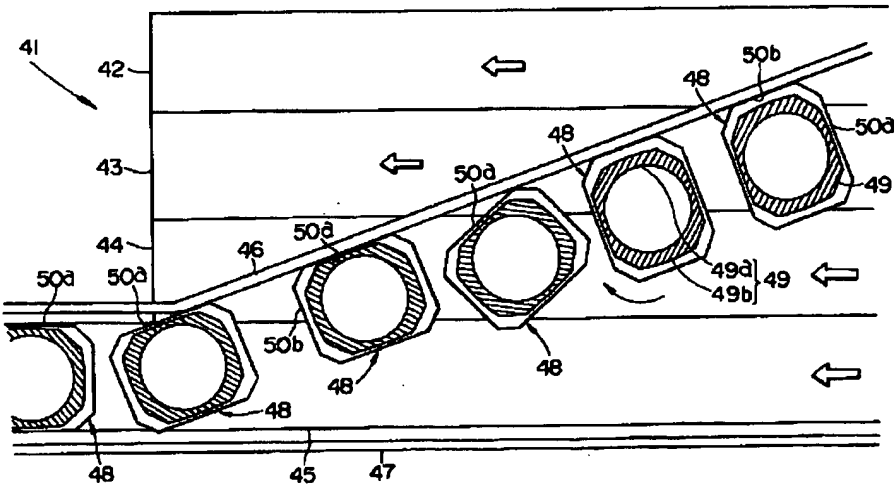
[Drawing 3]

FIG. 3



[Drawing 4]

FIG. 4



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